

REMARKS

The Applicant affirms its election to prosecute the invention of claims 1-11, election of a fuel cell as the electrochemical device, and election of a proton exchange membrane as the medium. Claims 12-19 have been withdrawn from further consideration.

Claims 1, 3, 8, 10 and 11 stand objected to because of certain informalities. These claims have been amended for the sole purpose of providing proper Markush language. Reconsideration is requested.

Claims 1-3, 6, 8, and 9 stand rejected under 35 U.S.C. 102(b) as being anticipated by Kumeta et al. (U.S. Patent 4,615,107). Kumeta discloses a method for assembling a fuel cell stack. (Kumeta, Title and Abstract). The method that includes, among other things, alternately stacking fuel cells and bipolar plates to form a sub-stack, tying up the substack by means of a preliminary compressive loading means comprising tie bars and tie rods, arranging the laid substacks on a supporting base, and tying in order to assemble the fuel cell stack. (Kumeta, Abstract; col. 2, lines 57-68).

The Examiner says that the pair of crossed tie bars and tie rods (as disclosed by Kumeta at col. 2, line 51) are considered to be perimeter tabs of a first and second component of the sub stack. The Applicant asserts that the tie bars and tie rods of Kumeta are not components of the substack, as claimed. According to claim 1, a first plurality of electrochemical cell components are secured into a first sub-stack and a second plurality of electrochemical cell components are secured into a second sub-stack. Then, the first and second sub-stacks are secured together. (See claim 1, above). If the Examiner considers the tie bars and tie rods to be "components of the sub stack", then those same tie bars and tie rods would have to be included when the first and second sub stacks are secured together in order to disclose the claimed method. That is not the case. Since Kumeta's fuel cell components (i.e., bipolar plates 3, fuel cells 2 and cooling plates 4) do not include "perimeter tabs" as presently claimed, Kumeta must include a pair of temporary end

plates 9, tie bars 12 and tied rods 13. (Kumeta, col. 2, lines 61-63 and 66-67; see also FIG. 1). Notably, the crossed tie bars 10a and 10b and tie rods 11 cited by the Examiner (citing Kumeta at col. 2, line 51) are different tie bars and rods that are used in the fuel cell stack 1, not in the substack 14.

Because Kumeta does not disclose each and every limitation of the claims, Kumeta does not anticipate the claims. Reconsideration and withdrawal of the rejection is requested.

Claims 5 and 7 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Kumeta et al. (U.S. Patent Number 4,615,107) in view of Mease (U.S. Patent Number 6,358,641 B1).

Claim 5 is directed to leak-testing the sub-stack. Kumeta discloses “discharge testing”, but the scope of such a test is unclear and presumably could not include leak-testing since there is no manifold in the substack. Mease discloses a method and apparatus for aligning fuel cell plates that apparently allows each plate module to be leakage tested. (Mease, Title; col. 2, lines 66-67). However, Mease deals only with internally manifolded cells, whereas Kumeta deals only with externally manifolded cells. Accordingly, Mease and Kumeta are incompatible references and there is no suggestion to combine them. For example, incorporating the pins 14 of Mease into a substack of Kumeta irreparably damage the substack since the pins would have to extend through holes in the flowfield, MEAs, and bipolar plates. Reconsideration and withdrawal of the rejection is requested.

Claim 7 is directed to the step of securing components into a sub-stack including “banding a second perimeter tab of the first component in the sub-stack to a second perimeter tab of the other component in the sub-stack.” Although the rejection has been directed against claim 7, there does not appear to be any evidence cited in support of the rejection. The Applicant asserts that neither Kumeta nor Mease, alone or in combination, teach, show or suggest the limitation of claim 7. Reconsideration and withdrawal of the rejection is requested.

Claims 10 and 11 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Kumeta et al. (U.S. Patent Number 4,615,107) in view of Ernst et al. (U.S. Patent Number

5,945,232). Claims 10 and 11 depend from claim 8, and ultimately depend from claim 1. Accordingly, claims 10 and 11 are deemed patentable for at least the same reasons asserted above with respect to claims 8 and 1. Reconsideration and withdrawal of the rejection is requested.

Claim 4 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Kumeta et al. (U.S. Patent Number 4,615,107) in view of Raiser et al. (U.S. Publication Number 2002/0192521 A1). Claim 4 depends from claim 2, and ultimately depend from claim 1. Accordingly, claim 4 is deemed patentable for at least the same reasons asserted above with respect to claims 2 and 1.

Furthermore, Raiser discloses an electrical isolation system for a fuel cell stack. Raiser is interested in the “resistance between a selected one of said fuel cells and said chassis ground.” (Raiser, paragraph [0014]). The present claims the “measuring the electrical resistance through the sub-stack.” (Claim 1 and Specification, page 8, lines 2-4). The Applicant asserts that Kumeta nor Raiser, alone or in combination, teach, show or suggest measuring the electrical resistance through a substack. Reconsideration and withdrawal of the rejection is requested.

In the event there are additional charges in connection with the filing of this Response, the Commissioner is hereby authorized to charge the Deposit Account No. 50-0714/LYNN/0177 of the firm of the below-signed attorney in the amount of any necessary fee.

Respectfully submitted,

/Jeffrey L. Streets, #37,453/

Jeffrey L. Streets
Attorney for Applicant
Registration No. 37,453
STREETS & STEELE
13831 Northwest Freeway, Suite 355
Houston, Texas 77040
(713) 939-9444